



Ocean Thermal Energy Conversion (OTEC)



OCEES is recognized as a world leader in OTEC technologies. The company works with industry and government officials to provide energy and resource solutions to communities around the world. OCEES is focused on commercialization of integrated multi-product OTEC systems based on proven, existing technologies.

OTEC Technology

- Converts solar energy stored in the upper layer of the tropical oceans into useful energy
- Power cycles use thermal difference between warm surface water and cold deep water
- Produces steady base load power; operational 24 hours per day
- Ideally suited for tropical locations with quick access to deep water or from offshore floating platforms
- Technology can be used in waste heat applications, such as nuclear power plants
- Integrated systems provide multi-product resource solutions
- Most economical in areas where fuel or electricity prices are high

Integrated OTEC Systems

OCEES designs integrated OTEC systems that are economically competitive through patented designs and efficient use of the seawater.

Integrated systems combine:

- Power generation
- Fresh water production
- Seawater/Lake Source district cooling
- Cold water aquaculture
- Cold water agriculture
- Hydrogen production

Power Cycles

- Open cycle—uses seawater as the working fluid
- Closed cycle (Kalina cycle)—uses ammonia/water mixture as working fluid
- Hybrid cycle—combination of open and closed cycles

Benefits

Economic, political, social, and environmental benefits result from the implementation of an OTEC system. Benefits include:

- No fuel costs
- Low operation and maintenance costs

- Reduced, stable, and predictable energy pricing
- Long term cost savings
- Dependable 24/7 clean energy
- Abundant fresh water
- Encourages resource sustainability
- Supports energy independence
- Utilizes locally abundant resource
- Promotes jobs and GDP growth
- Stabilizes import/export balance
- Reduces greenhouse gas emissions
- Produces carbon credits
- Demonstrates environmental responsibility

Leading the Global Energy Transition to Ocean Thermal Resources



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